



# **Proposed Zero-Emission Powertrain Certification Regulation (ZEP Cert)**

February 21, 2019

# ZEPCert Goals

- Promote development of effective and reliable HD electric and fuel-cell vehicles
- Increase consumer confidence in HD zero-emission technology
- Protect consumers purchasing vehicles as part of future technology-forcing zero-emission measures
- Protect California's incentive investments in zero-emission technology

# California's Heavy-Duty Zero-Emission Measures

- First Rulemaking: Innovative Clean Transit (2018)
- Planned Future Rulemakings
  - Zero-Emission Airport Shuttles (2019)
  - Advanced Clean Trucks (2019)
  - Heavy-Duty Low-NOx Standards (2020)
  - Drayage Trucks (2022)
  - Zero-Emission Cargo Handling Equipment (2022)

# California's Investments in Heavy-Duty Zero-Emission Technology

*Over \$500 million in funding provided, demand growing.*

- Cap-and-Trade and AQIP
  - HVIP: \$220 million
  - Pilot and Demonstration Projects: \$248 million
- Prop 1B: \$47 million
- AB617: >20% toward on-road zero-emission technology in early funding; expecting significantly more

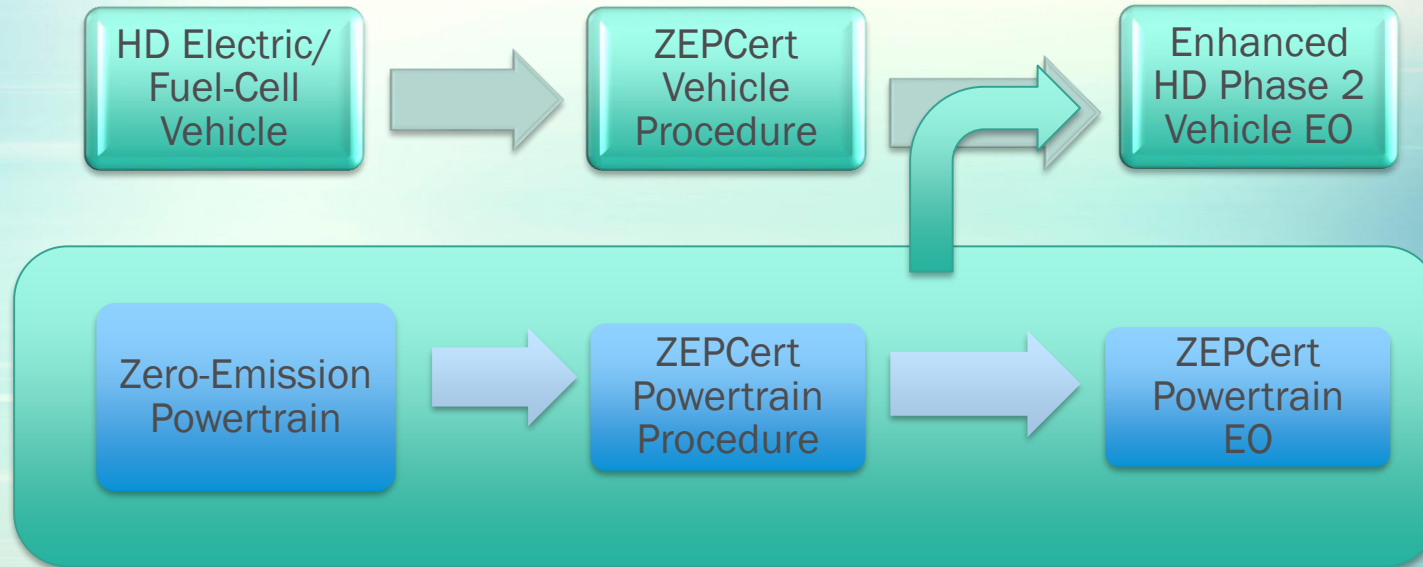
# ZEPCert Approach

- Codify expected best practices in California's HD certification program
- Applicability: MY2021+ HD electric and fuel-cell vehicles
- Optional process
  - May be required by other zero-emission measures in the future (e.g., ZE Airport Shuttle Proposal)
  - May be included in funding programs targeting more-mature zero-emission applications
  - Manufacturers could use to “prove” their product

# **ZEPCert Benefits**

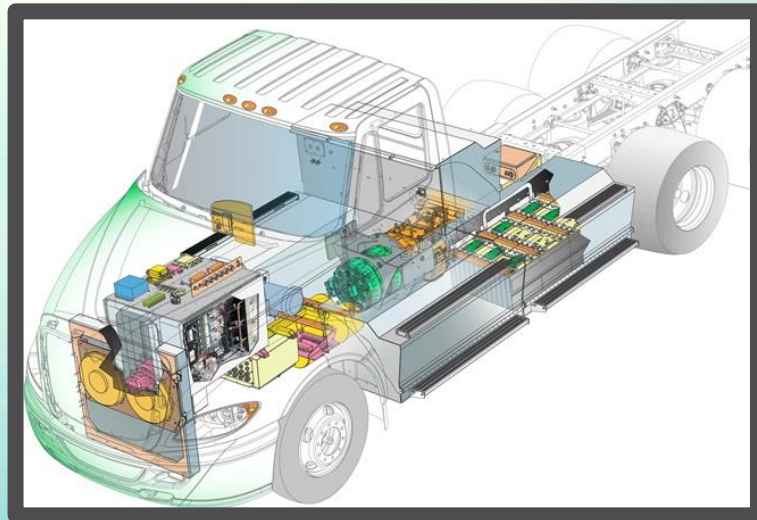
- Provides greater transparency and consistency
- Ensures effective product support
- Creates balanced certification framework

# Proposed ZEP Cert Certification Process



# Scope of Zero-Emission Powertrain Certification

- Zero-Emission Powertrain includes components, such as:
  - Electric motor/generator
  - Fuel-cell stack (if applicable)
  - Energy storage system
  - Battery/thermal management systems
  - Interface to traditional mechanical components



Credit: TransPower



# Scope of Heavy-Duty Electric and Fuel-Cell Vehicle Certification

Vehicle  
Certification

- Covers “vehicle integration components,” such as:
  - Driveshaft
  - Transmission
  - Axles



*Credit: TransPower*

# Optional Zero-Emission Powertrain Certification

# ZEPCert Powertrain Requirements

Objectives	Requirements
<i>Transparency and Consistency</i>	<ul style="list-style-type: none"> <li>• Standardized battery capacity test</li> <li>• On-board battery usage information</li> </ul>
<i>Product Support</i>	<ul style="list-style-type: none"> <li>• Repairability                             <ul style="list-style-type: none"> <li>• Generic scan tool compatibility</li> <li>• Third-party repair facility access to repair/diagnostic tools and information</li> </ul> </li> <li>• Warranty and recall</li> </ul>

# Transparency and Consistency – Standardized Battery Capacity Test

- Provides consistent battery-capacity information to purchasers
- Part of SAE J1798 (industry standard for battery testing)
- Simple constant-rate discharge test
- Alternatives allowed

# Transparency and Consistency – On-Board Battery Usage Information

- Provides fleets with information on the current condition of the battery
- Battery usage information available to owner
  - Cumulative battery throughput
  - Remaining battery capacity
- Accessible through scan tool or on-board interface

# Product Support - Repairability

- Ensures accessibility of diagnostic information and increases the efficiency of repairs
- Makes available repair information and tools to third-party repair facilities
- Aligns with the industry “Right-to-Repair” MOU
- Ensures powertrain compatibility with generic scan tools

# Product Support – Powertrain Component Warranty & Recall

- Ensures manufacturers are supporting their product and being proactive in fixing problematic components
- 3 years or 50,000 miles, whichever comes first (defects and workmanship)
- Recall at greater of 4% or 25 valid claims of failures that render vehicle inoperable

# Optional Heavy-Duty Electric and Fuel-Cell Vehicle Certification



# ZEPCert Vehicle Requirements

Vehicle  
Certification

Objectives	Requirements
<i>Transparency and Consistency</i>	<ul style="list-style-type: none"><li>• Required disclosures</li><li>• On-board efficiency information</li></ul>
<i>Product Support</i>	<ul style="list-style-type: none"><li>• Repairability: Third-party repair facility access to repair/diagnostic tools and information</li></ul>

# Transparency and Consistency

Vehicle  
Certification

- Required Disclosures
  - Warranty coverage
  - Statement regarding performance and operation considerations before purchasing
  - Owner's Manual information
- On-Board Efficiency Information
  - Accessible through scan tool or on-board interface

# Product Support - Repairability



- Ensures accessibility of diagnostic information and increases the efficiency of repairs
- Makes available repair information and tools to third-party repair facilities
- Aligns with the industry “Right-to-Repair” MOU

# ZEP Cert Projected Costs

- Based on historical sales data from HVIP
- Includes costs for reporting, testing, labeling and preparation of certification applications
- Estimated Cost: \$720 per vehicle
- Estimated Cost to CA businesses from 2021 through 2025: ~\$250,000

# Environmental Analysis (EA)

- Draft EA Completed
  - Released for 45-day public comment period:  
January 4, 2019 – February 19, 2019
  - Staff will prepare written responses to comments raising significant environmental issues
- Early Summer 2019
  - Present Final EA and written responses to comments on Draft EA to Board at the second Board Hearing

# Proposed 15-Day Modifications

*Changes to clarify intent, streamline, and add flexibility*

- Clarify intent of recall requirements
  - No capture rate
  - Tied to failures that render vehicles inoperable
- Streamline recall provisions
- Streamline warranty reporting
- Add diagnostic communications flexibility
- Other clarifying/editorial updates

# Staff Recommendation

- Adopt resolution directing staff to return with final proposed regulation to ensure ZEP Cert adoption
- Next Steps
  - Staff's proposed 15-day changes expected to be released for public comment in March/April 2019
  - Second Board Hearing anticipated May 2019